

VETROV, A.V.

Calculations according to the limiting state of flexible wooden
rods. Trudy GISI, no. 30:157-171 '61 (MIRA 16:9)

VETROV, A.V., kand.tekhn.nauk

New types of metal joints for bearing wooden members. Trudy GISI
no.25:61-71 '56. (MIRA 11:5)
(Framing (Building)) (Building, Wooden)

BARDUS, A.M., inzh.; VETROV, B.A., inzh.

Temporary bolting of main workings in the Western Donets Basin
mines. Bezop.truda v prom. 5 no.9:24-26 S '61. (MIRA 14:10)

1. Trost Pavlogradshakhtostroy.
(Donets Basin--Mine roof bolting)

POFANOV, A.A., kand.tekhn.nauk; LEYSOV, Ye.I., inzh.; YEL'KIN, S.A., inzh.;
MILYAYEV, M.N., inzh.; PASTUKHOV, A.I., kand.tekhn.nauk; DZEMIAN,
S.K., inzh.; KOSNAREV, A.S., inzh.; KLEYN, A.L., kand.tekhn.nauk;
DANILOV, A.M., inzh.; FILIPPOV, A.S., kand.tekhn.nauk; SALTANOV,
G.F., inzh.; VETROV, B.G., inzh.; PISARENKO, G.A., kand.tekhn.nauk;
RADYA, V.S., inzh.; GEROTSKIY, V.A., inzh.

In the Ural Mountain Region Scientific Research Institute for
Ferrous Metals. Stal' 22 no.10:892,916,938,953 0'62. (MIRA 15:10)
(Ural Mountain region—Metallurgical research)

VETROV, B.N.

USSR/Atomic and Molecular Physics - Heat, D-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34398

Author: Vetrov, B. N., Todes, O. M.

Institution: None

Title: Heat Transfer in Tubes with Packing

Original Periodical: Zh. tekhn. fiziki, 1956, 26, No 4, 800-808

Abstract: An experimental investigation was made of the heat transfer from air to the walls of a tube, filled with granular packing. The charge used was lead shot 2 mm in diameter, quartz sand with an average particle diameter of 1 and 3 mm, and steel balls 6 mm in diameter. Experiments with sand were carried out for a range of Reynolds numbers from 0 to 245; the obtained values of the heat transfer coefficient ranged from 16.2 to 48 kcal/m²hr deg. In experiments with steel balls, the range of Reynolds numbers was extended to Re = 632; α = 25.6 - 90 kcal/m²hr deg. The experiment carried out with shot gave approximately the same results as for steel balls. In experiments with increasing values of Reynolds numbers, only a slow gradual increase in α with stream speed, was observed and not a direct proportionality to the latter. In the laminar region, the coefficient of heat transfer

1 of 2

- 1 -

USSR/Atomic and Molecular Physics - Heat, D-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34398

Author: Vetrov, B. N., Todes, O. M.

Institution: None

Title: Heat Transfer in Tubes with Packing

Original Periodical: Zh. tekhn. fiziki, 1956, 26, No 4, 800-808

Abstract: approaches a constant value, determined by the effective heat conductivity of the packing.

VETROV, B.M.; TODMS, O.M.

Heat transmission in capped tubes. Zhur.tekh.fiz. 26 no.4:800-808
Ap '56. (MLRA 9:8)

(Heat--Transmission)

CARD 1 / 2

PA - 1257

SUBJECT USSR / PHYSICS
 AUTHOR VETROV, B.N., TODES, O.M.
 TITLE The Heat Transfer in Tubes with Depositions.
 PERIODICAL Zhurn. techn. fis, 26, fasc. 4, 800-808 (1956)
 Publ. 4 / 1956 reviewed 9 / 1956

Theoretical analysis of the problem: The present work theoretically and experimentally investigates the heat transfer from a moved gas and from an immovable layer of solid particles to the walls of a tube. The velocity of the steady heat exchange through the wall of the tube is essentially determined by the effective heat conductivity κ_g of the layer. In the case of $d/D > 1/12$ the dependence of the NUSSELT number on an additional criterion for d/D must be considered. If the material of the deposited particles is not too much heat conductive, another criterion for κ_g / κ_s must yet be considered. Here d denotes the diameter of the deposited particles, D - diameter of the tube, κ_g and κ_s heat conductivity of the gas and of the solid particles respectively. In the case of a flowing gas REYNOLD'S and PRANDTL'S numbers must in addition be taken into account.

Experimental methods are discussed on the basis of a drawing showing the test order which, essentially, consists of a brass cylinder enclosed by an exterior shell through which water from the main flows. The height of the deposited layer can be regulated by means of a grid. Several thermopiles introduced into the cylinder through transversal channels leading through the shell

Zurn.techn.fis, 26, fasc. 4, 800-808 (1956) CARD 2 / 2 PA - 1257

measure the difference in temperatures in the interior of the cylinder and in the surrounding medium.

Experimental results: A certain concrete experiment finished the following data: Air consumption - 91 litres per minute, = $5.45 \text{ m}^3/\text{hour}$. The flow velocity computed herefrom amounts to $1090 \text{ m}/\text{hour}$. The temperatures indicated by the thermopiles after temperature distribution has become steady are shown in a table. The coefficient of heat transfer from the cylindrical layer to the walls is then $25.7 \text{ Kkal}/\text{m}^2.\text{hour}.\text{grad}$, and REYNOLD'S number on the occasion of this experiment amounts to 52,5. The results of all experiments which were carried out with sand are shown together in a table. At $\text{Re} < 50$ the values of the heat transfer coefficient fluctuate about $20 \text{ Kkal}/\text{m}^2.\text{hour}.\text{grad}$. A special test carried out at $\text{Re} = 0$ by the method of quasistationary cooling of the entire tube furnishes the value $16.2 \text{ Kkal}/\text{m}^2.\text{hour}.\text{grad}$ for these coefficients. At $\text{Re} \rightarrow$ this coefficient probably tends towards the value 16, which agrees well with the data of other tests. Tests carried out in a similar manner with steel balls of 6 mm diameter (porosity $\xi = 0.40$) furnish a value of ~ 22 for the heat transfer coefficient at $\text{Re} \rightarrow 0$. Similar results were obtained also with shot with $d = 2 \text{ mm}$.

INSTITUTION:

VETROV-BIN

1968. Vetrov, B. N., and Todes, O. M., Propagation of heat waves due to the heating-up of furnace charges by a gas flow, III, (in Russian), *Zh. tekhn. Fiz.*, 25, 7, 1242-1247, July 1955.

This is the third and the final paper by the same authors on the subject of finding the coefficient of heat transfer from a hot gas flowing through a granulated material along a cylindrical vessel. The three papers appeared in the same issue of this source, *Zh.* 7, July 1955, and are being reviewed currently. In the first paper under the title: "Measuring the coefficient of heat transfer from a flowing gas to a furnace charge," authors assumed only forced convection and neglected heat transfer by conduction. In the second paper under the title: "Heating granulated material by conduction along a cylindrical vessel at non-adiabatic conditions," authors describe an investigation of heat transfer along the same charge by conduction only. In this report, authors present the mathematical solution of the heat equation with boundary conditions existing in their experimental set-up, in which they take into account both forced convection and conductivity along the vessel. The solution giving the temperature as a function of time and distance from the front of the charge provides a formula for finding the convection heat transfer from the gas and the conductivity of the charge. As the conductivity at small velocities (small Reynolds numbers) cannot be neglected, authors propose a modified Nusselt number which would take this into account for small values of Reynolds number (in the relation Nusselt number-Reynolds number for forced convection). This would enable people in industry to evaluate directly the width of the heat wave in which they are mainly interested, without bothering about convection and conduction.

T. Leser, USA

VETROV, B.N.

5000

1967. Vetrov, B. N., and Todes, O. M., Heating granulated material by convection along a cylindrical vessel at non-adiabatic conditions. II. (in Russian) Zh. tekhn. fiz. 35, 7, 1232-1241, July 1955.

This paper is the second one on the same subject published in the same issue of this source, Zh. 7, July 1955. In the first paper, under the title "Measuring the coefficient of heat transfer from a flowing gas to a furnace charge," authors report on their investigations of heating a charge of granulated material in a cylindrical vessel by blowing hot air through it. The measurements gave a temperature-time curve from which authors evaluated heat transfer and other thermal coefficients of the charge, assuming heat transfer by forced convection only and neglecting heat conduction. At large gas velocities, the thermal coefficients found experimentally gave good agreement with the established Nusselt number-Reynolds number relation for the forced convection. At small velocities, discrepancies appeared, due to conduction heat transfer along the charge itself, which was negligible at large velocities as compared with the forced convection heat transfer from the gas to the charge, but not so at small gas velocities.

In this paper, authors present results of heating a charge of granulated material by conduction only along the same cylindrical vessel. Theoretical solution was obtained in two stages. The first approximation was obtained by assuming that the charge is a solid cylinder (instead of porous granulated mass), and the boundary-value problem for the actual case was solved with the help of this first approximation. The experiments consisted of heating only the front of the charge and letting the heat be transferred by conduction along the charge (not letting the hot air through it), and plotting temperature-time curves. The experimental results agree with the theoretical solutions and authors are able to introduce a correction in their original results to make them agree with Nusselt number-Reynolds number relation.

T. Leser, USA

USSR/Physics - Thermodynamics, Applied

FD-3200

Card 1/1 Pub. 153-9/28

Author : Vetrov B. N. and Todes O. M.

Title : Measurement of heat emission coefficient from a gas flow to the furnace charge in conditions of non adiabatic heating. I.

Periodical : Zhur. Tekh. Fiz., 25, No 7, 1217-1231, 1955

Abstract : An indirect method is applied for determining the coefficient of heat emission by a hot gas stream to the furnace charge by comparing experimental with theoretical curves. The theoretical results were improved by deriving a formula for computing the volume coefficient of heat emission in real, i.e. non adiabatic conditions. These theoretical results agree with experimental data. Ten references, including 5 foreign.

Institution :

Submitted : June 5, 1954

USSR/Physics - Thermodynamics, Applied

VETROV, P. N.

FD-3201

Card 1/1

Pub. 153-10/28

Author : Vetrov E. M. and Todes O. M.

Title : Conductive heat transfer along granulated material in a pipe in non adiabatic conditions. II.

Periodical : Zhur. Tekh. Fiz, 25, No 7, 1232-1241, 1955

Abstract : A heat wave was theoretically deduced originating in heating of one end of pipe filled with granulated material and cooled on its lateral surface. The height of this wave decreases exponentially while the wave front moves with constant speed. Tests carried out on several pipes filled with steel balls or quartz sand confirmed the theoretical anticipations. Two references.

Institution :

Submitted : June 5, 1954

USSR/Physics - Thermodynamics, Applied

VETROV B. N.

FD-3202

Card 1/1

Pub. 153-11/28

Author : Vetrov B. N. and Todes O. M.

Title : Heat wave propagation during heating of the furnace charge by a gas stream. III.

Periodical : Zhur. Tekh. Fiz., 25, No 7, 1242-1247, 1955

Abstract : The two previous articles are generalized to a case of heat exchange between the gas stream and the furnace charge in non adiabatic conditions taking into account the conductive heat transfer along the charge. The previously derived equations of thermal equilibrium are used for analysis. Reference is made to the two previous articles by authors.

Institution :

Submitted : June 5, 1954

1121 RUC B.76
VETROV, B.N.; TODES, O.M.

Measurement of the coefficient of heat emission from the gas flow
to the furnace charge in nonadiabatic heating-up conditions.
Zhur.tekh.fiz.25 no.7:1217-1231 J1'55. (MIRA 8:10)
(Heat--Transmission) (Smelting furnaces)

Vetrov, B.N.
VETROV, B.N.; TODDS, O.M.

Heating-up by means of the longitudinal heat conductivity of
granulated materials located in a tube under nonadiabatic
conditions. Part 2. Zhur.tekh.fiz.25 no.7:1232 J1'55.
(MLRA 8:10)

.(Heat--Transmission) (Smelting furnaces)

VETROV, B. Ya.

MATSUK, Yu.P., inzhener; VETROV, B.Ya., inzhener.

Using all for cooling abrrel cylinders of EP screw presses.
Masl.-shir.prom. 23 no.6:13-14 '57. (MLRA 10:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut shirov (for Matsuk).
2. Nevinnomyeskiy maslozavod (for Vetrov).
(Oil industries--Equipment and supplies)

VETROV, B. Ya., inzhener

Structural changes in the screw press for preliminary removal of
oil. Masl.-zhir.prom.20 no.5:28 '55. (MIRA 8:11)

1. Nevinnomyeskiy maslozavod
(Power presses) (Oil industries--Equipment and supplies)

VETROV, D., inzh.

Postman of the planet Earth. Znan. sila 36 no.12:13-16 D '61.
(MIRA 15:1)
(Communication and traffic)

AUTHORS: Vetrov, D.S., and Soroka, I.N. SOV/19-58-6-629/685

TITLE: A Device for Putting Explosive Shells Into Blast Drill Holes (Ustroystvo dlya podachi patronov VV vo vzryvnyye skvazhiny)

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 6, p 139 (USSR)

ABSTRACT: Class 78e, 1. Nr 113735 (584756 of 17 Oct 1957). Submitted to the Committee for Inventions and Discoveries at the Ministers Council of USSR. A device for mechanized loading of explosive shells into drill holes; including a pneumatic cylinder with a piston and rod provided with friction grips for rods; moving the explosive charge by compressed air actuating the piston rod.

Card 1/1

VETROV, D.S., gornyy inzhener; SOROKA, I.N., inzhener-mekhanik

New techniques of charging upraise holes. Gor. zhur. no.5:71-72
My '60. (MIRA 14:3)

1. Leninogorskiy polemetallicheskiy kombinat.
(Blasting--Equipment and supplies)

AUTHOR: Vetrov, D.S. SOV/19-58-6-663/685

TITLE: A Device for Removing Frozen Material From Bodies
of Transport Vehicles (Ustroystvo dlya osvobozhde-
niya kuzovov transportnykh povozok ot primerzshego
k nim materiala)

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 6, p 147 (USSR)

ABSTRACT: Class 8le, 104. Nr 113429 (585979 of 10 Nov 1957).
Submitted to the Committee for Inventions and Dis-
coveries at the Ministers Council of USSR. A de-
vice with a striking tool on an inclined swivelling
and reciprocatively mobile rod controlled by pneu-
matic plungers, designed to knock frozen material
off dumping vehicles; the device can thus be used
for unloading vehicles with tip-up bodies. In
another variation a pneumatic shovel is used as a
striking instrument.

Card 1/1

VETROV, G.P.; KAL'FUS, M.K.

Long-distance piping of air to an oxygen section. Kislod 10 no.5:
24-25 '57. (MIRA 11:4)

(Oxygen) (Air)

L 27948-66

SOURCE CODE: UR/0105/66/000/001/0085/0086

ACC NR: AF6017708

AUTHOR: Bertinov, A. I.; Voronetskiy, B. B.; Condell'man, B. R.; Girshberg, V. V.;
Gromov, V. I.; Druzhinin, N. N.; Kunitskiy, N. P.; Naumenko, I. Ye.; Petrov, I. I.;
Vetrov, G. N.; Rusakov, V. G.; Silayev, E. F.; Slezhanovskiy, O. V.;
Syromyatnikov, I. A.; Tulin, V. S.; Filin, N. M.; Tselikov, A. I.; Chilikin, M. G.;
Yun'kov, M. G.

ORG: none

TITLE: Engineer N. A. Tishchenko (on his 60th birthday)

SOURCE: Elektrichestvo, no. 1, 1966, 85-86

TOPIC TAGS: electric engineering personnel, metallurgic furnace, electric equipment

ABSTRACT: Nikolay Afanas'yevich Tishchenko completed the Khar'kov Electrotechnical Institute in 1930, after working as an electrician in a Metallurgical plant from 1923-1926. He was active in the development of domestically produced electrical equipment for rolling mills and metallurgical furnace works. He was active during WWII in restoring electrical equipment damaged by the Germans. After the war, he was active in developing electrical drive equipment for both domestic and foreign metallurgical plants. He has been active in scientific work, publishing over 45 works in such varied fields as electric drives, equipment reliability and productivity of labor. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09, 13 / SUBM DATE: none

UDC: 621.34

Card 1/1 BLG

67-5-5/12

AUTHORS: Vetrov, G. P., Kal'fus, M. K.

TITLE: The Practice of Remote Air Supply of an Oxygen Plant by Means of a Pipeline (Praktika zaboraz vozdukhaz kislorodnykh tsakhov po truboprovodu na dal'nei rasstoyanii).

PERIODICAL: Kislorod, 1957, Nr 5, pp. 24-25 (USSR)

ABSTRACT: In the factory area of the Plant for Synthetic Caoutchouc in Karaganda there are beside the technological halls two more great carbide halls as well as halls for the production of great quantities of acetylene, which serve also for its hydration to acetyldehyde. During production in these halls it is unavoidable that acetylene is constantly effused into the air. The air fractionating blocks are equipped with acetylene adsorbers. These could, however, not save the plants from an explosion in 1953. Of late, after the installation of the new pipeline, the adsorbers are not longer switched on. The remote air-supply, as a protection against air impurities, was introduced in 1949. From the working practice of the oxygen plant it was seen that the remote air-supply sufficiently protects the air fractionating apparatus against acetylene accumulation. The cases where the acetylene analysis was positive became more rare. The analyses were made three times a day by means

Card 1/2

The Practice of Remote Air Supply of an Oxygen Plant by
Means of a Pipeline.

67-5-5/12

of the condensation-calorimetric method. In connection with the air-supply from the area of the oxygen plant the authors also investigated the wind directions and their influence on the accumulation of acetylene in the apparatus in the course of 13 days. On this occasion it turned out that the wind direction as well as the distance between the air fractionating hall and the source of impurity influence the accumulation of acetylene in the apparatus. When the pipeline for the air-supply is sufficiently distant from the production site of acetylene it can not completely avoid the entrance and the accumulation of acetylene but it can decrease its content in the apparatus. There is 1 table.

AVAILABLE: Library of Congress

1. Acetylene-Determination 2. Air-Purification

Card 2/2

VETROV, I. [Vietrov, I.], inzh.

New diesel locomotive. Znan. ta pratsia no. 1:15 Ja '61.
(MIRA 14:4)

(Diesel locomotives)

KUZ'MENKO, V.A. (Kiyev); VETROV, I.Ye., inzh. (Kiyev)

Traffic safety to be placed under public control. Zhel. dor.
transp. 47 no.6:60-63 Je '65. (MIRA 18:6)

1. Zamestitel' nachal'nika sluzhby lokomotivnogo khozyaystva
Yugo-Zapadnoy dorogi (for Kuz'menko).

VETROV, I.Ye.

Methods for better training of specialists for the operation of
electric and diesel locomotives. Zhel.dor.transp. 44 no.7:42-
44 J1 '62. (MIRA 15:8)

1. Zamestitel' nachal'nika Kiyevskoy tekhnicheskoy shkoly
mashinistov lokomotivov.
(Locomotive engineers--Education and training)

VETROV, I. Yu. [Vietro, I. IU.]

Diesel locomotives with hydraulic drive. Nauka i zhyttia 11
no.2:14-15 F. '61. (MIRA 14:3)

(Diesel locomotives--Hydraulic drive)

VETROV, I.D., redaktor; KHOTENKO, A., tekhnicheskiy redaktor; TRUKHANOVA, A.,
tekhnicheskiy redaktor

[Code of labor law of White Russia] Kodeks zakonov o trude
Belorusskoi SSR. Ofitsial'nyi tekst s izmeneniyami na 1 sentyabrya
1956 goda i s prilozheniem sistematizirovannykh materialov. Minsk,
Gos.isd-vo BSSR, 1957. 221 p. (MLRA 10:7)
(White Russia--labor laws and legislation)

VE 166, 7-9

AUTHOR: Vetrov, I., Engineer (Baku)

84-12-35/49

TITLE: What Prevents Economizing Fuel (Chto meshayet ekonomit' aviatoplivo)

PERIODICAL: Grazhdanskaya aviatsiya, 1957, Nr 12, p 28 (USSR)

ABSTRACT: The author first refers to an unidentified operational unit, where fuel economy was achieved by means of proper adjustment of the fuel-injection assembly of the ASh-82FN engine, an exact computation of flights to comply with the schedule, the use of "cruising graphs", and optimum speeds of 45 to 60 per cent of the maximum output of the power plant. Criticism is directed against the Fuel Consumption Norms issued in February 1952, which are based on the actual flight time. The author demands that the distance covered will be made the basis of fuel allowances. Along with the plane crews, the maintenance workshops and the traffic control agencies are held responsible for fuel economy.

AVAILABLE: Library of Congress

Card 1/1

VETROV, IU. A.

Zemleroi nye mashiny [Excavating machinery]. Kiev, Gostekhizdat USSR, 1952.

SO: Monthly List of Russian Accessions, Vol. 6 No. 8 November 1953

SERGEYEV, N.V.; VETROV, I.Ye.; DROZDOV, A.A., inzh., prepodavatel';
SAVEL'YEV, S.T., inzh., prepodavatel'; SURKIS, M.N., inzh.,
prepodavatel'; BULATOV, B.N., inzh., prepodavatel'; DUKLER, V.D.,
inzh., prepodavatel'; FEL'DMAN, N.F., prepodavatel'

Once more about the training of locomotive servicing brigades.
Elek. i tep. tiaz. 5 no.5:44 My '61. (MIRA 14:7)

1. Nachal'nik Kiyevskoy tekhnicheskoy shkoly (for Sergeyev).
2. Zamestitel' nachal'nika Kiyevskoy tekhnicheskoy shkoly
(for Vetrov).
3. Kiyevskaya tekhnicheskaya shkola (for
Drozdov, Savel'yev, Surkis, Bulatov, Dukler, Fel'dman).
(Railroads--Employees)
(Locomotives--Maintenance and repair)

KRYLOV, A.P. (Kiyev); KUZ'MENKO, V.A. (Kiyev); VETROV, I.Ye., inzh.(Kiyev)

Larger volume of transportation with a smaller expenditure of fuel; from the experience of the Southwestern Railroad. Zhel. dor. transp. 45 no.3:70-72 Mr '63. (MIRA 16:6)

1. Nachal'nik sluzhby lokomotivnogo khozyaystva Yugo-Zapadnoy zheleznoy dorogi (for Krylov).
2. Nachal'nik lokomotivnogo depo Darnitsa Yugo-Zapadnoy zheleznoy dorogi (for Kuz'menko).
3. Lokomotivnoye depo Darnitsa Yugo-Zapadnoy zheleznoy dorogi (for Vetrov).

(Railroad Management)
(Diesel locomotives)

VETRCV, I.Ye., inzh. (Kiyev)

Ways to reduce the expenditure of diesel fuel. Zhel. dor. transp.
46 no.10:59-61 0 '64. (MIRA 17:11)

ISAKOV, A.A. (Kemerovskaya oblast'); ZHURGARAYEV, Amangel'dy (Dzhambul'skaya obl., KazSSR); VLADIMIROV, A. (Asbest); FRIMAN, L.I. (Yaroslavl'); KILIMNIK, Ya.Ye. (Vinnitsa); TEREKHOV, I.A. (Skopin); AKDAULETOV, N.A. (pos.Mertuk. KazSSR); ZAKHARKIN, V.Ye. (pos.Rudtsev, Tul'skaya oblast'); SHESTOPAL, G.A. (Moskva); KOTIY, O.A. (Yaroslavl'); GAUKHMAN, V.A. (Moskva); LOPSHITS, A.M. (Yaroslavl'); SERGUSHOV, S.A. (Yaroslavl'); GOTMAN, E.G. (Pechora); VETROY, K.V. (Putintsevo, Vostochno-Kazakhstanskoy obl.); MIKHELEVICH, Sh.Kh. (Daugavpils); SKOPETS, Z.A. (Yaroslavl'); RYBAKOV, L.M. (Yaroslavl'); CHEGODAYEV, A.I. (Gavrilov-Yam)

Problems. Mat.v shkole no.6:85-92 N-D '62. (MIRA 16:1)
(Mathematics--Problems, Exercises, Etc.)

VETROV, M.

Problems prompted by life. NTO 4 no.1:44-45 Ja '62.

(MIRA 15:1)

1. Zamestitel' predsedatelya soveta nauchno-tekhnicheskogo obshchestva
Permskogo neftepererabatyvayushchego zavoda.
(Perm--Petroleum refineries)

VETROV, M., polkovnik

Patriotic and international obligation. Voen. vest. 41 no.4:
47-50 Ap '62. (MIRA 15:4)

(Russia--Armed forces)

(Russia--Relations (General) with foreign countries)

VETROV, Mikhail Sergeevich; TSYBULEVICH, B.I., red.; BELYAYEV, P.A.,
tekhn.red.

[In Cambodia, ancient country of the Khmers], V Kambodzhe -
drevnei strane Khmerov. Moskva, Izd-vo In-ta mezhdunar.
otnoshenii, 1958. 63 p. (MIRA 11:8)
(Cambodia--Description and travel)

VETROV, N.

Paper made from reed. Tekh.mol 29 no.5:32 '61. (MIRA 14:5)
(Reed products) (Paper industry)

VETROV, N. I.

Unused reserves. Elek. i tepl. tiaga no.4:19-21 Ap '57.
(MIRA 10:6)
1. Glavnyy inzhener sluzhby elektrifikatsii i energeticheskogo
khozaystva Moskovsko-Ryazanskoy dorogi.
(Electric railroads--Wires and wiring)

BELYAYEV, Igor' Aleksandrovich; VAINSHTEYN, Boris Zinov'yevich;
VETROV, N.I., inzh., retsenzent; KALININ, V.K., kand.
tekhn. nauk, red.; KHITROVA, N.A., tekhn. red.

[Mechanization of work and automation of systems in contact-
network maintenance] Mekhanizatsiia rabot i avtomatizatsiia
ustroistv na distantsiakh kontaktnoi seti. Moskva, Trans-
zheldorizdat, 1963. 84 p. (MIRA 16:5)
(Electric railroads--Wires and wiring)

BELYAYEV, I.A., inzh.; VETROV, N.I., inzh.; MARGOLIS, S.M., inzh.;
BORZENKO, Ye.A., inzh., retsenzents; MIKHEYEV, V.P., kand.
tekhn. nauk, retsenzents; GORCHAKOVA, O.D., inzh., red.;
VOROB'YEVA, L.V., tekhn. red.

[Installation, operation and repair of overhead contact
systems] Montazh, ekspluatatsiya i remont kontaktnoi seti.
Moskva, "Transport," 1964. 294 p. (MIRA 17:3)

MIKHEYEV, V.P.; AGEYEV, I.A.; SDVIZHKOV, N.S.; VETROV, N.I.,
inzh., retsenzent; KALININ, V.K., kand. tekhn. nauk,
red.; MURAV'YEVA, N.D., tekhn. red.

[Decreasing the wear of contact wires; work practice of
the staff of the West Siberian railroad] Umen'shenie iz-
nosa kontaknykh provodov; opyt raboty kollektiva Zapadno-
Sibirskoi dorogi. Moskva, Izd-vo "Transport," 1964. 89 p.
(MIRA 17:3)

VETROV, N.I.

Constantly increase the reliability of service of overhead contact systems. Elek, i tepl. tiaga 6 no. 1:26-28 Ja '62. (MIRA 15:1)

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(Electric railroads--Maintenance and repair)

(Electric lines--Overhead)

KIL'MAN, Ya.I., kand. tekhn. nauk; KUZ', N.P.; VETROV, N.Ye.; ALEKSEYEVA, M.N.

Using wash water and main filtrate for the preparation of ammonium
carbonate. Trudy GIAP no.8:164-172 '57. (MIRA 12:9)
(Ammonium carbonate)

VETROV, Nikolay Ivanovich; PRUDYUS, A.S., inzh., red.; KHITROV, P.A.,
tekhn.red.

[Handbook for foremen and brigade leaders of the railroad contact
network] Spravochnik мастера i brigadiira kontaktnoi seti zheleznnykh
dorog. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soob-
shcheniia, 1960. 262 p. (MIRA 13:5)
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VETROV, Nikolay Ivanovich; BELYAYEV, I.A., inzhener, redaktor; BOBROVA, Ye.N.,
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[Repair of contact systems; work practices of a power supply section
of the Moscow-Ryazan railroad] Remont kontaktnoi seti; opyt raboty
uchastka energosnabzheniya Moskovsko-Ryazanskoi dorogi. Moskva,
Gos. transp. zhel-dor. izd-vo 1956. 75 p. (MIRA 10:2)
(Electric railroads--Repair)

VETROV, N.I.

Constantly increase the operational safety of overhead contact systems (to be continued). Elek.1 tepl.tiaga 6 no.2:23-25
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(Electric railroads—Wires and wiring)

VETROV, Nikolay Ivanovich; BORZENKO, Ye.A., inzh., retsenzent;
SIDOROV, N.I., inzh., red.; BOBKOVA, Ye.N., tekhn. red.

[Operation and repair of overhead d.c. contact systems]
Ekspluatatsiia i remont kontaktnoi seti postoiannogo toka.
Moskva, Transzheldorizdat, 1962. 166 p. (MIRA 15:9)
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5/120/60/000/006/021/045
1035/ES14

9,6450
5,5700 (1043, 1223, 1273)
26.2312
11.1030
ABSTRACT

Tal'ross, V.L., Bekasov, L.L., Zentayev, G.D.,
Frankovich, A.L., Petrov, G.D., Lyubimov, A.K.,
Lazovskaya, A.K., Yefremov, V.I., Arifin, V.D.,
Saurat, V.I. and Yuhvidin, A.I.

TITLE: The PMC-2 (DMS-2) Mass Spectrometer Designed for
Studying Chemical Reactions and the Determination of
Free Radicals

PERIODICAL: Pribury i tekhnika eksperimenta, 1960, No.6, pp.78-84

TEXT: A double magnetic mass-spectrometer designed for study-
ing reactions in the gaseous phase and, in particular, for the
determination of free radicals is described. Two methods are used
to produce the ions. In the first method the mixture to be
analyzed is ionized by charge transfer to specially produced ions.
The latter are formed in a separate ion gun by means of electron
bombardment and are mass-analyzed in a small magnetic analyzer.
In the second method the mixture under consideration is ionized
directly by electron bombardment. Quasi-monochromatization is
achieved by a method based on that reported by Fox et al. (Ref.11).
The gas from the "reactor" is introduced into the ion source in the
Card 1/6

form of a molecular beam which is mechanically interrupted at a
known frequency. In distinction to the method described by Foner
and Hudson (Ref.2), in which the molecular and ion beams are
perpendicular, in the present system the two beams are coaxial,
which means that smaller voltages are necessary for the "extraction"
of the ions from the ionization region and it is possible to reduce
the intensity of the background mass-spectrum. A particular feature
of the present instrument is the use (in the measuring part of the
spectrometer) of K-stabilization of parameters such as the
accelerating voltage, the voltage supplying the detector, the
excitation current of the ion gun cathode, and the supply voltage for
the ion source cathode. This was described by the second of the
present authors in Ref.10. The mass numbers are determined from a
knowledge of the magnetic field which in turn is measured with the
aid of a Hall probe (germanium crystal). The basic mass spectro-
metric arrangement employed is shown in Fig.3. Products of
chemical reactions taking place in the "reactor" I enter the
region II through a small aperture in the thin glass diaphragm 3
Card 2/6

ASSOCIATION: Institut Khimicheskoy Fiziki AN SSSR (Institute of
Chemical Physics, AS, USSR)

SUBMITTED: October 15, 1959

Fig.2

I - reactor, III - ion gun, IV - small magnetic analyzer,
V - large magnetic analyzer



Card 5/6

ACCESSION NR: AP4020295

8/0139/64/000/001/0026/0031

AUTHORS: Vatroy, O. D.; Dekabrun, L. L.

TITLE: Pulse apparatus for measuring nuclear magnetic relaxation time

SOURCE: IVUZ. Fizika, no. 1, 1964, 26-31

TOPIC TAGS: nuclear relaxation, spin lattice, magnetic field, radio frequency, pulse generation, nuclear magnetization, precession, pulse modulator, amplifier

ABSTRACT: The construction details of a pulse-measuring instrument have been described. Measurement of a wide range of nuclear relaxation times T_1 and T_2 in liquids as well as in solid bodies is possible using this apparatus. T_1 is the spin-lattice relaxation time and T_2 is the spin-spin or transverse relaxation time. For both relaxation measurements the specimen is placed in a constant magnetic field H_0 and, after attaining thermal equilibrium, is subjected to the action of radio frequency (rf) field H_1 in the form of a direct pulse. The frequency field H_1 must satisfy the resonance condition

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ACCESSION NR: AP4020295

γ -gyromagnetic ratio. Under the rf field the nuclear magnetization vector departs from its equilibrium position by the angle Θ where

$$\Theta = \gamma H_1 t_w$$

A list of methods for measuring the relaxation time is given, consisting of measuring the decay of spin-echo amplitudes and the decay of free precession after the rf impulse. The block-diagram of an instrument for measuring the relaxation time is given. The specimen is bombarded by an rf pulse coming in from the amplifier capacity of a transmitting counter coil. The amplifier capacity is guided by a modulator which receives the pulses from a programmer. The time sequence of these pulses is determined experimentally by selecting a particular program. The instrument is also shown to be capable of measuring the self-diffusion coefficient. Orig. art. has: 4 formulas, 3 figures, and 1 table.

ASSOCIATION: none

SUBMITTED: 27Sep62

DATE ACQ: 31Mar64

ENCL: 00

SUB CODE: EC

NO REF SOV: 001

OTHER: 011

Card 2/2

VETROV, O.D.; DEKABRUN, L.L.

Pulse apparatus for measuring nuclear magnetic relaxation times.

Izv. vys. ucheb. zav.; fiz. no.1:26-31 '64.

(MIRA 17:3)

1. Moskovskiy inzhenerno-fizicheskiy institut.

VETROV, O.D. (Moskva); DEKABRUN, L.L. (Moskva)

Multipurpose pulse train generator. Avtom. i telem. 24
no.11:1589-1592 N '63. (MIRA 16:12)

TAL'ROZE, V.I.; DEKABRUN, L.I.; TANTSYREV, G.D.; FRANKOVICH, Ye.I.;
VETROV, O.D.; LYUBIMOVA, A.K.; LAVROVSKAYA, G.K.; YEROFEEV, V.I.;
GRISHIN, V.D.; SKURAT, V.Ye.; YUKHVIDIN, A.Ya.

Mass spectrometer EMS-2 for investigating chemical reactions and
identifying free radicals. Prib. i tekhn. eksp. no.6:78-84 N-D
'60. (MIRA 13:12)

1. Institut khimicheskoy fiziki AN SSSR.
(Mass spectrometry) (Radicals (Chemistry))
(Chemical reactions)

VETROV, O. D.

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5-5900/008, 1227, 1273
26.23.15
11.13.30
AUTORS:

Tal'roze, V.L., Dekabru, L.E., Zaslavskiy, G.D.,
Frankovich, Ye.L., Yalovskiy, G.D.,
Lavrushko, G.K., Yalovskiy, G.D.,
Sharat, V.Ye. and Yalovskiy, G.D.,
The PMC-2 (RMS-2) Mass Spectrometer Designed for
Studying Chemical Reactions and the Determination of
Free Radicals

TITLE:

PERIODICAL: Pribury i tekhnika shchepunov, 1960, No. 6, pp. 78-84

TEXT: A double magnetic mass-spectrometer designed for study-
ing reactions in the gaseous phase and, in particular, for the
determination of free radicals is described. The methods are used
to produce the ions. In the first method the mixture to be
studied is ionized by charge transfer to specially prepared ions.
The latter are formed in a separate ion gun by means of electron
bombardment and are mass-analyzed in a small magnetic analyzer.
In the second method the mixture under consideration is ionized
directly by electron bombardment. Quasi-masschromatogram is
achieved by a detector based on that reported by Fox et al. (Ref.11).
The gas from the "reactor" is introduced into the ion source in the
Card 1/6

The PMC-2 (RMS-2) Mass Spectrometer Designed for Studying Chemical
Reactions and the Determination of Free Radicals

Form of a molecular beam which is mechanically interrupted at a
known frequency. In addition to the method described by Fox
and Hudson (Ref.8) in which the molecular and ion beams are
perpendicular, in the present case the ion beams are coaxial,
which means that similar velocities are the ion beams are coaxial,
of the ions from the ionization region and it is possible to reduce
the intensity of the background mass-spectrum. A particular feature
of the present instrument is the use (in the measuring part of the
spectrometer) of E-stabilization of parameters such as the
accelerating voltage, the voltage applying to the detector, the
emission current of the ion gun cathode, and the supply voltage for
the ion source cathode. This was described by the second of the
present authors in Ref.10. The mass numbers are determined from a
knowledge of the magnetic field which in turn is measured with the
aid of a Hall probe (germanium crystal). The basic mass spectro-
metric fragment employed is shown in Fig.2. Products of
chemical reactions taking place in the "reactor" 2 enter the
region 11 through a small aperture in the thin glass diaphragm 8
Card 2/6

In the case of a molecular beam. This collector beam is collimated
further by the diaphragm 6 which separates the volume 11 from
the region in which ionization takes place. A movable screen 7
is placed in front of the diaphragm 6 and interrupts the molecular
beam 55 times per sec. In the case of ionization by charge transfer,
the primary ions are produced in the ion gun 111. The ion beam
formed there is mass analyzed in the 60° magnetic analyzer 14
which has a working radius of 100 cm. The primary ion beam, consist-
ing of ions of the required mass, intersects the molecular beam and
charge transfer takes place. In the case of ionization by electron
bombardment, the source becomes analogous to that described by the first
and second of the present authors in Ref.9. In the case of ioniza-
tion by a molecular beam, the mechanism of the ionization of the
molecular beam by the charged particles is described in Ref.7.
In the mass-spectrometer is measured either by an amplifier or
by an electron multiplier. The vacuum chamber of the mass-spectro-
meter is an all-metal system and all the sections are out-gassed at
300 to 350°C before the operation is begun. As an illustration of
Card 3/6

BM-2

27/120/50/000/006/001/045
BM-2/7314

The PMC-2 (BM-2) Mass Spectrometer Designed for Studying Chemical Reactions and the Determination of Free Radicals

The possible applications of the instrument, data are quoted on the formation of free radicals in the pyrolysis of hydrazine. In these experiments, the hydrazine saturated from a glass container into a heated capillary through a control valve. The capillary was heated to a known temperature, as a result of which the hydrazine decomposed into nitrogen, hydrogen, ammonia and some unstable products (Foner and Hudson, Ref.18). Fig.7 shows the distribution of line intensities in the mass-spectrum of hydrazine obtained by the charge transfer method using NH_3 ions formed from ammonia. The pressure in the source was 5×10^{-5} mm Hg and the pressure in the chamber of the mass analyzer was 4×10^{-6} mm Hg. For comparison, the dotted line shows the mass-spectrum obtained by the ionization of hydrazine with 50 eV electrons. Fig.8 shows the intensity distribution obtained under similar conditions at 1000°C (dotted line) and 25°C (continuous line). The authors are grateful to V. I. Muzilov, S. I. Verbitsky, B. G. Melov, M. M. Morozov and M. I. Markin for assistance in this work. There are 8 figures and 16 references: 11 Soviet and 9 non-Soviet.

Card 4/6

The PMC-2 (BM-2) Mass Spectrometer Designed for Studying Chemical Reactions and the Determination of Free Radicals

ASSOCIATION: Institut Khimicheskoy Fiziki AN SSSR (Institute of Chemical Physics, AS, USSR)

SUBMITTED: October 15, 1959

FIG. 3

X - Reactor, XII - ion gun, IV - small magnetic analyzer,
V - large magnetic analyzer



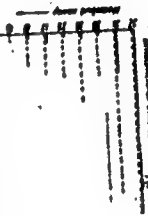
Card 5/6

The PMC-2 (BM-2) Mass Spectrometer Designed for Studying Chemical Reactions and the Determination of Free Radicals

FIG. 8

Charge transfer mass spectra of hydrazine and its decomposition products at 1000°C (dotted) and 25°C (full line).

Key: 1 - Relative intensity,
2 - mass number.



Card 6/6

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Short discussion of ship repair problems, touching
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Basic principles of alloying structural steels. S. I. Sakhin and V. Ya. Vetrov. *Nal* 6, 280-91 (1961). This investigation was concerned with methods for imparting to structural steel ductility and fibrous structure of break. These properties were induced by regulating the rate of cooling after hardening. For each kind of steel tested, at a given hardness-testing temp., shape, etc., there was a crit. rate of cooling below which brittleness appeared. The kind and quantity of alloying elements should be chosen so as to obtain as low a crit. rate of cooling as possible.

M. Hoshel

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

REPORT ONE ONLY LIST

VETROV, YE. M.

807/3004

TABLE I BOOK EXPLANATIONS

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Radiation Chemistry. [in:] Radiative radiochemistry, radiations, and radiochemistry. (Reports of Soviet Scientists. V. 4: Chemistry of Radioactive Elements and Radiation Measurements) Moscow, Atomstat, 1959. 523 p. 8,000 copies printed. (Series: It's Irreversible)

24. (Title page): A. P. Vinogradov, Academician; Ed.: V. I. Lashin; Tech. B.: Ye. I. Masel.

PURPOSE: This collection of articles is intended for scientists and engineers interested in the applications of radioactive materials in science and industry.

CONTENTS: The book contains 26 separate studies concerning various aspects of the chemistry of certain radioactive elements and the processes of radiation effect on matter. These reports discuss present-day methods of processing irradiated nuclear fuel, research in the chemistry of mercury, thorium, uranium, plutonium, and americium, problems related to the sorption and binding of radioactive wastes, the radiolysis of aqueous solutions and of organic compounds, the mechanism of polymer chain grafting, and the effect of radiation on natural and synthetic rubbers. V. I. Prusakov edited the present volume. Most of the reports are accompanied by references. Contributions to individual investigations are mentioned in annotations to the Table of Contents.

Annotation: In V. I. Lashin, V. I. Lashin, I. V. Fedin, and L. I. Prusakov. Radiolysis and Properties of Several Heavy Fluorides of Actinoid Elements (Report No. 2208)

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Annotation: G. M. and Ye. M. Vinogradov. Investigations on the Chemistry of Americium (Report No. 2127)

137

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Annotation: V. I. Lashin, A. P. Vinogradov, V. I. Lashin, and L. I. Prusakov. Radiolysis and Properties of Several Heavy Fluorides of Actinoid Elements in Aqueous Solutions (Report No. 2207)

178

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Annotation: E. A. A. S. Arshinov, V. T. Korshakov, P. V. Rukhovich, and others. Experimental Investigation of the Radiation of Laboratory Waste Water Contaminated with Radioactive Elements (Report No. 2053)

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